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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,329	10/20/2003	Kaori Iwamoto	DW0080USNA	4189
24199	7590	08/11/2004	EXAMINER	
DUPONT DOW ELASTOMERS, LLC			HU, HENRY S	
PATENT RECORDS CENTER				
4417 LANCASTER PIKE			ART UNIT	
BARLEY MILL PLAZA 25			PAPER NUMBER	
WILMINGTON, DE 19805			1713	

DATE MAILED: 08/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/689,329

Applicant(s)

IWAMOTO ET AL.

Examiner

Henry S. Hu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Oath and Declaration of 4-19-2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5-3-2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Applicants' Oath and Declaration filed on April 19, 2004 was received. **Claims 1-8** are pending now. An Action follows.

Specification

2. The disclosure is objected to because of the following informalities:
 - (a) On **page 8** at line 17, both recitations such as "**about 15° – about 80°C**" and "**about 0.3- about 1.0 MPa**" are improper and it may be confused by the ordinary skill in the art. The examiner suggests using "**about 15° to about 80°C**" and "**about 0.3 to about 1.0 MPa**".
 - (b) On **page 13** at line 26, recitation of "perfluorooctanate" is wrong and should be changed to "**perfluorooctanoate**" since it is related to a salt of **perfluorooctanoic acid**.
 - (c) On **page 15** at line 18, recitation of "Toyo" may have a typographical error. The examiner believes a correction to "Tokyo" may be needed.

Appropriate corrections for (a) - (c) are required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. The limitation of parent **Claim 1** in the present invention relates to ***an elastomer part for exposure to reactive plasma, said part having a magnetic flux density of at least 10 gauss at its surface***. Parent **Claim 7** relates to the same function of **Claim 1** but with an elastomer in a slit valve door, while parent **Claim 8** relates to the same function of **Claim 1** but with an elastomer in a pipe flange. See other limitations of dependent **Claims 2-9, 11 and 13-18**.

5. Claims 1-7 are rejected under 35 U.S.C. 103(a) as obvious over Hill et al. (US 5,990,218) in view of Yoden (US 5,062,904).

Regarding the limitation of parent **Claim 1**, Hill et al. disclose the preparation of **a polymeric magnet composition** having ultraviolet light and heat resistance that can be molded into **rubbery articles** such as magnetic seals for refrigerator or freezer doors (title; abstract, line 1-5). Hill et al. further disclose that such a composition comprises (A) a rubbery or an elastomeric polymer, a magnetic powder and (C) an internal lubricant (abstract, line 16-24; column 11, line 10-42).

The Hill reference is **silent of using a magnet flux density of higher than 10 gauss for resisting reactive plasma**. Yoden teaches that when a magnetic recording media comprising ferromagnetic metal powders having a saturation magnetic flux density at about 3000 gauss, it can be exposed to plasma in an oxygen atmosphere (abstract, line 1-5; column 11, line 33-52). The advantage is such a recording system has been shown a high-density recording as well as excellent storage stability for long time plasma exposure (column 1, line 7-12; abstract, line 1-5; column 3, line 40-43).

6. In light of the fact that **both Hill and Yoden have prepared rubbery or elastomeric articles by comprising magnetic powders as well as with the same application to resist light or heat**, one having ordinary skill in the art would therefore have found it obvious to modify the magnetic polymer composition prepared from

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Hill by carrying a saturation magnetic flux density up to 3000 gauss as taught by Yoden. By doing so, in addition to the resistance of ultraviolet light and heat, such a composition can be further used to resist the exposure of plasma in the atmosphere of oxygen and showing excellent oxidation stability. Therefore, producing a persistent and safer magnetic polymer article.

7. Regarding **Claims 4-5**, Hill et al. disclose that the magnet powder can be selected from a variety of **iron, nickel and cobalt compounds that have ferromagnetic capacity** including ferrites and permanent magnets (column 11, line 10-31).

Regarding other parent **Claim 7**, Hill et al. have disclosed that such a magnetic rubbery composition can be molded into a **door part of refrigerator or freezer** as discussed in Claim 1.

The remaining dependent **Claims 2-3 and 6** are thereby rejected with the same reason applied for the above rejections of Claims 1, 4-5 and 7.

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over in view of Hill et al. (US 5,990,218) in view of Yoden (US 5,062,904) as applied to Claims 1-7, and further in view of Salmasi et al. (US 6,237,424 B1).

Regarding the limitation of parent **Claim 8**, the discussion of the disclosure of the prior art of Hill/Yoden for Claims 1-7 of this office action is incorporated here by reference. The above-mentioned references are **silent about** applying such an elastomer part into a pipe flange. **Salmasi et al.** teach that the flanges of the pipe may carry a magnetic flux or an alternating magnetic flux, the advantage is such a magnetic device can be used in an electromagnetic flow meter and shows an **oxidation stability in plasma** (abstract, line 1-5; column 7, line 18-19; column 5, line 60; column 9, line 22-24; column 11, line 59).

9. In light of the fact that **Hill, Yoden and Salmasi all have prepared rubbery or elastomeric articles by comprising magnetic powders as well as with the same application to resist light or heat**, one having ordinary skill in the art would therefore have found it obvious to modify the magnetic polymer composition specifically prepared from Hill/Yoden to make flanges of the pipe as taught by Salmasi. By doing so, in addition to the resistance of ultraviolet light, heat and plasma, such a composition can be further used as a part of an electromagnetic flow meter to show excellent oxidation stability. Therefore, producing a persistent, safer and more diversified magnetic polymer article.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure. The following references relate to an elastomer part for exposure to reactive plasma, said part having a magnetic flux density of at least 10 gauss at its surface:

US Patent No. 6,190,496 B1 to DeOrnellas et al. discloses the design of a plasma-etch reactor and the method of emerging films (title). Although rare earth magnets are used to establish the magnetic field so that it can confine the plasma developed within the reactor chamber (abstract, line 1-9). However, DeOrnellas fails to teach or fairly suggest **using an elastomeric part having a magnet flux density of higher than 10 gauss.** Therefore, the claimed magnetic elastomer part is not disclosed.

US Patent No. 5,431,769 to Kusakibaru et al. discloses the design of a plasma treatment and the method of emerging films (title). Although uniform treatment can be applied by using plasma cleaning, plasma CVD, RIE or the like, Kusakibaru fails to teach or fairly suggest **using an elastomeric part having a magnet flux density of higher than 10 gauss.** Therefore, the claimed magnetic elastomer part is not disclosed.

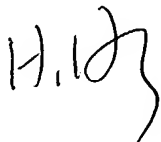
11. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Henry S. Hu whose telephone number is (571) 272-1103. The examiner can be reached on Monday through Friday from 9:00 AM –5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor,

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David Wu, can be reached on (571) 272-1114. The fax number for the organization where this application or proceeding is assigned is (703) 872-9306 for all regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Henry S. Hu

August 9, 2004



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